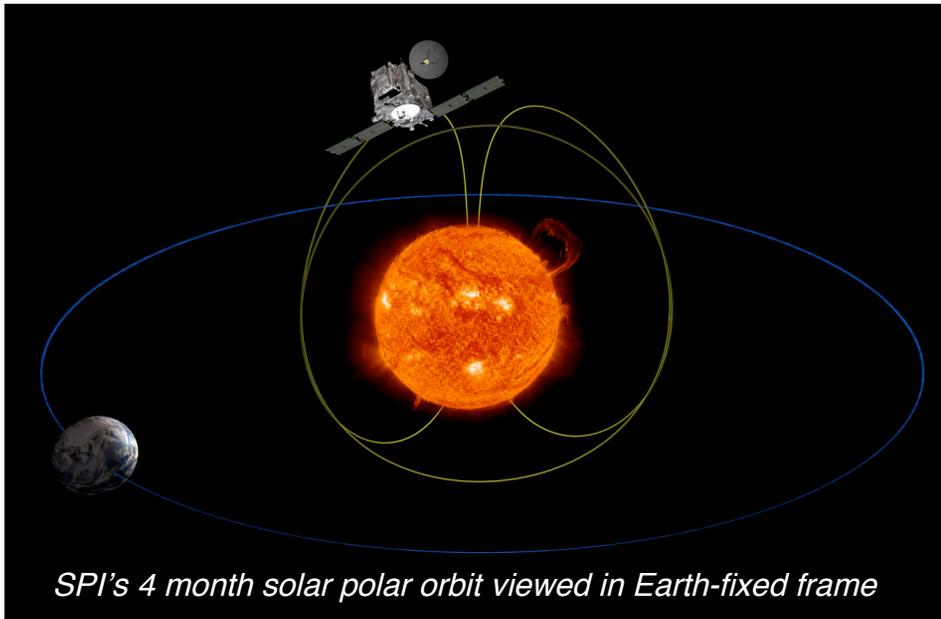


# Solar Polar Imager (*aka* POLARIS)



## **Mission Implementation Description:**

- \* SC in highly inclined ( $\sim 75^\circ$ ) 3:1 Earth-resonant heliocentric 0.48 AU orbit
- Low-thrust trajectory with solar sail delivery (electric propulsion is another option)
- \* 5 remote sensing, 3 in-situ instruments, 3-axis stabilized s/c  
43 kg, 52 W, Avg. Acquisition Rate  $\sim 100$  kbps

## **Measurement Strategy:**

- Surface & interior flows for helioseismology
- Polar magnetic fields and flux transport
- Polar coronal imaging in white light and EUV
- UV Spectrometer for outflow velocities
- *In situ* magnetic fields, solar wind and energetic particles
- Total solar irradiance variability

## **Science Objectives:**

Dynamo: Helioseismology & magnetic fields of polar regions  
Polar view of corona, CMEs, solar irradiance for structure, evolution and space weather prediction  
Link high latitude solar wind & energetic particles to coronal sources

## **Associated RFAs:**

- F4 Understand ...dynamos
- F2 Understand the... processes that accelerate and transport particles.
- H1 Understand...solar activity that affects Earth's space climate and environment.
- J2 ...predict the origin and onset of solar activity ..
- J3 ... predict the propagation and evolution of solar disturbances to enable safe travel for human and robotic explorers.

## **Enabling Technology Development:**

- Solar sail (current launch vehicles)
- Constellation may enable SEP implementation